

April 30, 1987

CD-87-06 (LD)

Dear Manufacturer:

SUBJECT: Shift Points for Manual Transmission Test Vehicles
Equipped with Shift Indicator Lights--A Proposal

The December 12, 1982 (CD-82-10) and June 22, 1983 (CD-83-10) manufacturer guidance letters and Advisory Circular (A/C) No. 72A provide the framework of our current shift indicator light (SIL) policy. We now have experience with the current SIL usage rate survey method and with the optional on-road shift point survey method provided in A/C No. 72A. As a result, we are considering amending our procedures to allow only the use of the on-road shift point survey outlined in A/C No. 72A. We believe that SIL fuel economy impact can most accurately and cost effectively be determined using this method. We are considering making this change as early as the 1989 model year. However, in an effort to minimize disruption on manufacturers' planned certification and fuel economy programs, carryover of old data would be allowed for some period of time. To facilitate a most timely decision, we are requesting that manufacturers provide written comments on this proposal by June 30, 1987.

The shift point survey method can provide a substantial cost benefit. Data provided by one manufacturer indicated that a shift point survey can be conducted for approximately the same cost as a usage rate questionnaire survey once the road route has been established. In addition, once shift points are established using the on-road survey test, vehicles would no longer need to be tested twice to establish the fuel economy test result. Savings of both EPA and manufacturer test resources would be realized with the use of the shift point survey.

Substantial disadvantages of the usage rate survey are that it is subjective and the results can be influenced by the type of questions used in the survey. EPA is concerned that inappropriate usage rate credit could be gained by selecting the most advantageous survey questionnaire and analyzing method. In addition, the final usage rate is based on a statistical confidence interval which is influenced by sample size. The larger the sample size the smaller statistical error

factor subtracted. This survey technique tends to favor large manufacturers who sell more vehicles and can more easily obtain a large sample. If we are to retain this survey technique, we would expect to make modifications to overcome some of its problems, with particular emphasis on standardizing or better controlling the questions used in each survey.

The shift point survey measures a driver's actual shifting habits as a result of the SIL whereas the usage rate survey records a driver's perception of how he shifts. Since perceptions may differ from reality, the shift point survey should more accurately reflect the fuel economy improvement obtained by the actual use of SIL's. Furthermore, the usage rate method bases the fuel economy credit on the frequency of the SIL usage. Thus, the usage rate survey does not reflect the light's effectiveness in influencing when shifts occur. For example, although a person may use the SIL, we still do not know where the shift points are. In contrast, the shift point survey reflects how well the SIL modifies shifting habits.

Another benefit of the shift point survey is that the survey may be completed prior to actual production start-up by using prototype vehicles. This eliminates need for the "up-front" credit presently allowed to manufacturers for new models when a survey is not yet available. The shift point survey technique allows better designs to get their full fuel economy benefit the first year because there would be no "up-front" credit limit. It also eliminates the cost of recalculating labels and the liability of relabeling due to followup SIL usage rate survey results.

In summary, shift point surveys are simpler, more representative, allow accurate first year credit, and will treat manufacturers more equitably than the usage rate survey technique. The only downside we can see to shifting to exclusive use of this procedure is the disruption and cost of re-surveying vehicles already surveyed under the other method. For this reason, we would expect to allow a reasonable carryover policy designed to require all new surveys to be run using the A/C No. 72A procedure.

Any usage-rate survey that could be carried-over under the current policies will be accepted without requiring a shift point survey to be conducted during a transition period. However, to assure full implementation of the shift point survey technique we are considering dropping all use of the usage-rate

survey, regardless of possible carryover, beginning with the 1991 model year.

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All written comments on the proposal should be sent to the Certification Division. Any questions on the proposal should be addressed to Eldert Bontekoe or Susan O'Connor of my staff.

Sincerely,

Robert E. Maxwell, Director
Certification Division
Office of Mobile Sources

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